

**REMARKS**

Reconsideration of the application in view of the foregoing amendments and following remarks is respectfully requested.

**I. Status of the Claims**

Claim 1 has been amended. No new matter has been added. Support for the amendment can be found, for example, on page 17, lines 5-10 of the originally-filed specification.

Claims 9-13 were previously withdrawn from consideration.

New claims 14-17 have now been added. No new matter has been added. Support for the new claims may be found, for example, in FIG. 5, and on page 16, lines 9-13, and page 17, lines 5-10.

**II. Objection to the Specification**

The specification was objected to for including a grammatical error. Specifically, “nut” on page 2, line 25 of the originally-filed specification should read “but.” Applicants have amended the specification to correct this error. Thus, reconsideration and withdrawal of the objection to the specification is respectfully requested.

**III. Rejections Under 35 U.S.C. § 101**

Claims 1-8 were rejected under 35 U.S.C. § 101 as not falling within one of the four statutory categories of invention.

For a process to qualify under 35 U.S.C. § 101, it must (1) be tied to a particular machine or apparatus or (2) transform a particular article to a different state or thing. *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008). The Examiner has advised that the rejection may be overcome “by adding a particular machine (i.e., a processor or computer) to any steps a) – g) of claim 1.” See Detailed Action, Page 5.

In accordance with the Examiner's advice, claim 1 of the present invention has been amended so as to recite that step g of optimizing the prototype is performed "using a processor operating with optimization software." Support for the amendment to claim 1 may be found, for example, on page 17, lines 5-10 of the originally-filed specification. The addition of a processor to the optimizing step of the present invention ties the claim to a particular machine and does so in a step that is central to the process since it allows parameters of fine structures from shell architectures to be applied to an optimized mechanical system. Accordingly, the process of claim 1 is now tied to a particular machine, a processor running optimization software. See USPTO PowerPoint Presentation, *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101*, August 25, 2009. Claims 2-8 depend directly or indirectly from claim 1 and therefore are also now tied to a particular machine. Reconsideration and withdrawal of the rejection to claims 1-8 under 35 U.S.C. § 101 is therefore respectfully requested.

#### IV. New Claims

New claims 14-17 have now been added. No new matter has been added. Support for the new claims may be found, for example, in FIG. 5, and on page 16, lines 9-13, and page 17, lines 5-10.

It is respectfully submitted that new claims 14-17 also qualify as a patent-eligible process under 35 U.S.C. § 101 based at least on their dependency from claim 1, which has been amended so as to be tied to a particular machine. Further, new claims 14-16 tie the process to additional machines, and new claim 17 recites the further step of manufacturing the prototype, such that an article is produced.

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Amendment dated December 11, 2009  
Reply to Office Action of September 11, 2009

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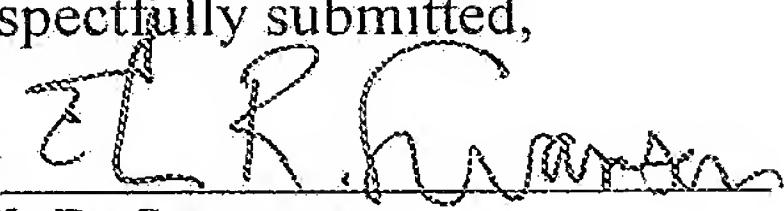
**CONCLUSION**

In view of the foregoing amendments and arguments, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

If there are any other issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

The Commissioner is hereby authorized to charge any unpaid fees deemed required in connection with this submission, including any additional filing or application processing fees required under 37 C.F.R. § 1.16 or 1.17, or to credit any overpayment, to Deposit Account No. 04-0100.

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Respectfully submitted,  
By   
Erik R. Swanson  
Registration No.: 40,833  
DARBY & DARBY P.C.  
P.O. Box 770  
Church Street Station  
New York, New York 10008-0770  
(212) 527-7700  
(212) 527-7701 (Fax)  
Attorneys/Agents For Applicant